NORTH ATTLEBOROUGH WWTF PERMIT MODIFICATION
RESPONSE TO COMMENTS

In accordance with the provisions of 40 C.F.R. § 124.17, this document presents the United States Environmental Protection Agency's (EPA's) and the Massachusetts Department of Environmental Protection's (MassDEP's) responses to comments received on the draft NPDES permit modification (MA0101036) issued to the Town of North Attleborough (Permittee) for discharges from its wastewater treatment facility (WWTF) to the Ten Mile River. The draft permit modification was issued pursuant to 40 C.F.R. § 124.19(d) following an appeal by the Permittee and the Rhode Island Department of Environmental Management (RI-DEM) to the U.S. EPA Environmental Appeals Board (Board) of the limits for metals and nutrients in the permit as originally issued. Under section 124.19(d), EPA is authorized to withdraw and re-propose for public notice and comment any contested permit condition prior to the Board rendering a decision to grant or deny review of the permit. In this case, the draft permit modification was expressly limited to the average monthly total phosphorus limitation in effect from April 1-October 31, which has been reduced from 0.2 mg/l to 0.1 mg/l.

The public comment period on the draft permit modification began October 19, 2007, and ended on November 17, 2007. The agencies received comments from the Town of North Attleborough (Permittee). The Permittee's comment letter addressed the phosphorus limit as well as other issues that are beyond the scope of the draft modification. Comments outside the scope of the permit modification are listed at the end of this response to public comments, with short explanations of why EPA considers the comment to be outside of the modification's scope.

The final permit and this response to public comments are available and can be downloaded from EPA's web site at http://www.epa.gov/NE/npdes/permits_listing_ma.html. Copies of the Final Permit also may be obtained by writing or calling EPA's Municipal Permits Branch (CIP), Office of Ecosystem Protection, 1 Congress Street, Suite 1100, Boston, MA 02114-2023; Telephone: (617) 918-1695.

Comment #1: Page 1 of 2 of the draft permit modification indicates that the effective date of the modified permit will be January 4, 2007. This date will make the Town in non-compliance since January 4, 2007 for a modified permit condition that to date is only a draft permit condition. Back dating the effective modified permit is not fair to the Town and misrepresents the true circumstances.

Response #1: Page 1 of 2 of the draft permit modification states that January 4, 2007 is the issuance (signature) date of the original permit, not the effective date. The filing of appeals with the Environmental Appeals Board by the Permittee and RI-DEM stayed the effectiveness of the entire permit. In accordance with 40 C.F.R. §§ 124.16 and 60, EPA subsequently placed the uncontested and severable portions of the permit into effect as of May 1, 2007. The contested permit conditions will continue to be stayed until the petitions for review now pending before the Board are dismissed.

Page 1 of 2 of the draft permit modification indicates that the effective date of the modification would be the date of signature, if no comments were received during the public comment period, or would be no sooner than 30 days after signature if comments were received. These timeframes are consistent with regulations at 40 C.F.R. § 124.15. The permit modification will go into effect on April 1, 2008.

Comment #2: The Town submitted substantial comments to the January 2007 permit during the draft permit review process. These comments are dated September 12, 2006. EPA responded to the comments but, in the Town's opinion, did not fully and adequately consider these comments when finalizing the permit conditions. Specifically, low concentration total phosphorus and nitrogen continue to be based on assumptions and suppositions set forth by EPA and not defined by clear and widely accepted scientific data. Clear linkage to specific numeric limits applicable to the North Attleborough wastewater treatment plant discharge and the characteristics of the Ten Mile River receiving stream are not available, including all upstream and downstream discharges, land uses, environmental conditions and Narragansett Bay. Lacking such defensible site specific data, EPA and other regulatory agencies have assumed times of the year and numeric limits based on gross observations and generalized logic. It remains the Town's position that the total phosphorus and nitrogen quality requirements that were included in the NPDES permit that was replaced by the January 4, 2007 permit should continue until such time as adequate and defensible supporting scientific data is available to establish if more stringent numeric limits and applicable time periods are warranted.

Response #2: The commenter has not indicated what assumptions and suppositions set forth by EPA are not defined by clear and widely accepted scientific data. The need for a phosphorus limit is well-documented in the scientific assessment reports cited in the Statement of Basis, and through a comparison of this water quality information to national guidance documents on phosphorus-driven eutrophication. The permit limit is based on a careful evaluation of national criteria recommendations and literature values relative to instream phosphorus levels that are necessary to be achieved in order to ensure that the designated uses of the receiving water will be met. Existing evidence of nutrient impairment in the receiving waters combined with projected instream phosphorus concentrations under critical low flow conditions above threshold levels necessary to control cultural eutrophication justify imposition of effluent limitations for phosphorus at this time. *See* 40 C.F.R. § 122.4(d) ("No permit may be issued: [w]hen the imposition of conditions cannot ensure compliance with applicable water requirements of the affected states.").

Comment #3: The total phosphorus numeric limit of 0.1 mg/L included in the draft permit modification fails to consider that the phosphorus contained in a wastewater stream is comprised of both inorganic phosphate compounds (orthophosphate and polyphosphates) and organic phosphorus compounds. Specifically, the organic phosphorus compounds are typically very difficult to remove and are often considered to be non-reactive to treatment technologies or in the environment. Several important items remain unknown:

3.1. The concentration of organic phosphorus compounds could potentially be greater that the proposed numeric limit of 0.1 mg/L. If so, then attaining an effluent quality of 0.1 mg/L may not be reasonably possible.

3.2. Available scientific data does not provide a means to determine if organic phosphorus compounds are of concern to receiving stream water quality. The laboratory analytical technique for measuring total phosphorus includes an aggressive hot acid digestion process to breakdown all elemental phosphorus contained in a sample. Ortho and polyphosphate analysis measure the fraction that is generally accepted as the phosphorus type of concern for water quality protection. The balance determined when the ortho and polyphosphate measured amount is subtracted from the total phosphorus measured amount is the organic fraction. It does not seem likely that natural processes in the environment replicate the hot acid digestion laboratory process so it also seems unlikely that organic phosphorus compounds are of significance relative to long term water quality.

Response #3: The national guidance document relative to phosphorus-driven eutrophication recommends regulating total phosphorus since even non-reactive phosphorus can become reactive in the natural environment. There is no evidence to support the claim that organic phosphorus is greater than 0.1 mg/l at this facility. On the contrary, many municipal wastewater treatment plants have successfully achieved effluent total phosphorus concentrations well below 0.1 mg/l (see Advanced Wastewater Treatment to Achieve Low Concentration of Phosphorus, USEPA Region 10, April 2007). In any event, under the Clean Water Act, water quality-based effluent limitations must be imposed regardless of technological feasibility. If the permittee can demonstrate that achieving an effluent limit of 0.1 mg/l is not feasible, a Use Attainability Analysis or a variance may be pursued under EPA regulations and state water quality standards.

Comment #4: The permit includes defining compliance with total phosphorus and total nitrogen on a monthly average basis. These two parameters are considered to be a chronic concern with the accumulation within the environment over time being the driving criterion and not individual daily or monthly discharge quantities. For these parameters defining compliance based upon a 90 day rolling average is a reasonable and appropriate method to balance wastewater quality and treatment process variability, while controlling the accumulation of these constituents over time.

Response #4: Contrary to the comment above, EPA is concerned about both shorter *and* longer term impacts of nutrient loading into the receiving water and, given the existing level of impairment in the receiving water, believes that the 90-day rolling average that has been proposed by the commenter will not adequately address these concerns in this case.

Other Comments

The following comment was submitted on the draft permit modification by the Town of North Attleborough, but has been determined to be outside of the scope of the permit modification. EPA has therefore not prepared a detailed response, but has stated why it believes the comment is outside of the scope of the modification

Comment: The total nitrogen numeric limit if 8 mg/L includes consideration of an assumed attenuation rate of 40% for nitrogen attenuation that occurs within the fresh water flow path to Narragansett Bay based on gross application of regional data from different time periods (200-2002 North Attleborough data vs. 1995-1996 stream data). Studies performed by the Woods Hole Research Center Relative to Cape Cod region wastewater management studies clearly demonstrates that fresh water wetlands type environments remove significant amounts of nitrates from the water column essentially releasing nitrogen gas back to the atmosphere. The Ten Mile River in Massachusetts is a shallow, slow moving stream that probably provides good denitrification conditions. The specific fate of nitrates discharged by the North Attleborough wastewater treatment plant to the Ten Mile River and downstream receptors has not been quantified. It remains possible that natural attenuation within the fresh water environment is greater for the North Attleborough discharge characteristics and location and may be adequate to remove significantly more nitrogen before entering the marine environment.

Response: The comment relates to the attenuation of nitrogen in the Ten Mile River, which would impact the total nitrogen limit in the permit, but does not relate to the total phosphorus limit. Given that only the phosphorus limit was proposed to be modified, this comment is outside of the scope of the proposed modification.